

ABSTRACT OF THE DISCLOSURE

An implant comprises a photocatalytic layer on at least one surface. In some embodiments, the photocatalytic layer is a semiconductor oxide that is doped. According to some embodiments, the implant comprises a wave guide. According to some embodiments the implant comprises a light port. According to some embodiments, the implant comprises a reflective material on a surface of the waveguide. According to some embodiments the implant comprises a composite material comprising a first material that has a transmissivity when exposed to a predetermined wavelength of light and a second material that has photocatalytic activity when exposed to the predetermined wavelength of light. According to some embodiments the implant comprises a light source adapted to irradiate the photocatalytic surface.